Perceived barriers of, and benefits to, healthy eating reported by a Spanish national sample

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Abstract

Objective: A national survey was developed in order to assess the difficulties and the potential benefits that the adult Spanish population perceive when they try to eat a healthier diet and also to help nutrition educators to develop relevant and specific strategies to promote healthy eating.

Design: The study survey was carried out according to an established protocol on a representative sample of 1009 Spanish subjects over 15 years of age selected by a multi-stage procedure. This study belongs to a partnership in a pan-European survey about food, nutrition and health. The analysis was focused on the evaluation of the seven most frequently chosen barriers and benefits.

Results: There was a trend to select as the main barriers: 'irregular work hours' (29.7%), 'willpower' (29.7%) and 'unappealing food' (21.3%), while 'prevent disease' (73.6%) was the most frequently selected benefit to healthy eating. About 20% of the subjects said they did not have any difficulty eating healthier and most people believed that healthy eating was associated with at least one benefit.

Conclusions: In Spain, nutrition educators should be aware that an irregular and busy lifestyle, willpower and food-related factors (such as price and unappealing foods) are the main perceived barriers to healthy eating. Conversely, the prevention and health promotion aspects are the main perceived benefits.

Keywords
Health behaviour
Food
Social factors
Nutrition
Education

Diet and nutrition are clearly essential determinants of good health, although the contribution of appropriate nutrition to promoting health and preventing disease is difficult to measure[1]. Poor dietary patterns play a role in many leading causes of death and disease in Spain, despite this, Spaniards are perceived as benefiting from a 'healthy Mediterranean' diet, providing fruit, vegetables, fish and olive oil in higher amounts than other Western diets, which has been associated with a lower prevalence of cardiovascular diseases and other with diet-related health problems[2,3]. Furthermore, although there are no official recommendations for healthy eating in Spain, the pyramid pattern is widely accepted[2]. In other countries, several recent trials have shown that modifying dietary habits can reduce the risk of death and several diseases related to dietary habits[4]. There is a wide range of social barriers to changing eating habits such as cost of food, lack of knowledge, limited cooking experience, apathy, dietary conservatism, etc.[5] In this context, studying the perceived barriers towards, and benefits of, healthy eating may provide a better understanding of the factors that motivate people or prevent them from making changes in their diet[6,7].

Changing food consumption is not an easy task even for those who have actual personal health reasons for doing so, because people have difficulties relating health with their own lifestyles or personal behaviours[8]. However, from the consumer's point of view there are significant reasons for eating more healthily such as to improve overall health and prevent disease[9–11]. Nevertheless, nutrition educators should know what those benefits are in order to decide whether the general public require any or more information about some of the possible benefits from nutrition guidelines[12].

The aim of this study was to assess the perceived barriers in trying to eat healthier and to get information about the expected benefits of a healthy diet in the Spanish adult population.

Methods

A national survey was carried out according to an established protocol on a representative sample of 1009

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Spanish subjects over 15 years of age, according to the standards of the marketing research set out by ICC/ESOMAR, the European Society for Opinion and Marketing Research. The sample was selected by a multistage procedure to ensure national representativeness[13]. This study belongs to a partnership in a pan-European survey about attitudes to food, nutrition and health[14]. The survey was integrated in a pan-European project co-ordinated by the Institute of European Food Studies (Dublin). The selection of the sample was aimed to obtain nationally representative samples from each member state[15]. The interviews were conducted as part of Eurobus, an international group of market research organizations. All interviews were completed between October 1995 and February 1996. The selected sampling units were chosen randomly, by a stratified and balanced method according to the population size within each city. Sampling points were randomly chosen from each sampling unit. In the geographical distribution six areas were considered (Nielssen regions): Northeast (Lérida, Baleares, Barcelona and Zaragoza), East (Valencia, Castellón and Alicante), South (Jaén Sevilla, Malaga, Cadiz and Cordoba), Centre (Zamora, Segovia, Ciudad Real Salamanca, Valladolid and Madrid), Northwest (Leon, Orense, Asturias and Pontevedra) and North (Cantabria, Navarra, La Rioja, Alava and Vizcaya). Within cities, individuals were chosen by a random route procedure applying quotas of age and sex, according to the 1991 census data. Only one person per household was interviewed. In cases where more than one person of the family met the quota requirements, only the first eligible subject who came to the door was selected.

Sample size was calculated with the following assumptions: alpha error = 5%, precision = ±3.1% and 50% of individuals in the category of interest. Participation rate was 88%. As with any sample of subjects participating in a survey, there was the possibility that non-respondents had different barriers of and benefits to healthy eating from those who took part. Once individuals who did not want to participate were excluded, 1009 Spanish subjects over 15 years of age were interviewed.

Each subject was personally contacted at his/her home by a professional interviewer specifically trained for this study, belonging to a specialized firm developing social surveys. The average duration of each interview was about 15 min.

An expert panel including nutritionists and food behavioural scientists from all member states of the EU and market researchers from industry convened to discuss the barriers to healthy eating included in the survey. Subjects were asked to select two options out of a list with 22 possible barriers chosen by the experts (Table 1). The options 'No difficulty' and 'Other' were also included and barriers in relation to resistance to change, such as 'I don't want to change my eating habits' and 'Not knowing enough about healthy eating'.

About the perceived benefits of healthy eating, two questions were asked. The first question was 'Some people believe that healthy eating has specific benefits, some of which are shown on this card. Which, if any, would you personally believe can be achieved by healthy eating?' (Table 2). People were asked to select their answer from a list with nine items. The second question was 'Which one benefit would be the most personally significant for you?' Subjects had to choose only one answer from the list (Table 5).

Social class was analysed according to occupation and was classified into four categories (1, middle–upper, professionals; 2, middle, part-time workers, 3,

Table 1 The 22 barriers to eating healthily which were included in the survey on 1009 Spanish adults on consumer attitudes to food, nutrition and health. Percentages of interviewed individuals mentioning each barrier (%). A maximum of two choices were offered

Barrier	%
Irregular work hours	29.7
Willpower	24.7
Unappealing food	21.3
Busy lifestyle	17.8
Price of healthy foods	15.6
Giving up foods that I like	14.3
I don't want to change my eating habits	12.6
Taste preferences of family or friends	11.5
Not knowing enough about healthy eating	8.5
Strange or unusual foods	7.5
Cooking skills	7.4
Too great a change from my current diet	7.4
Lengthy preparation	6.7
Limited choice when I eat out	6.6
Not enough food to satisfy hunger	5.8
'Experts' keep changing their minds	5.5
Healthy food is more perishable	5.5
Storage facilities	4.7
Limited cooking facilities	4.7
Healthy food more awkward to carry home from shops	2.0
Feeling conspicuous amongst others	1.7
No difficulty	20.6

Table 2 The 12 benefits of healthy eating which were included in the survey on 1009 Spanish adults on consumer attitudes to food, nutrition and health. Percentages of interviewed individuals mentioning each benefit (%)

Benefit	%
Prevent disease in general	73.6
Stay healthy	69.4
Have a better quality of life	50.9
Control my weight	47.0
Be fit	39.4
Live longer	28.7
Have plenty of energy	28.2
Do well at sport	15.8
Look attractive	10.7
Healthy options not available in shop or canteen or home	6.6
None of these	1.6
Don't know	1.0

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middle–lower, non-manual and manual qualified workers; 4, lower, unemployed and non-qualified workers). Education level was classified into three categories according to the model of the Statistic Bureau of the Regional Government of Madrid in primary, secondary and university level[16].

The χ^2 test for linear trend and the Pearson χ^2 test were used (* $P<0.05$, ** $P<0.01$, *** $P<0.001$) with SPSS software, to assess the effect of demographic variables such as sex, age, educational level, socioeconomic level and employment status on each one. Analyses were weighted to maintain national representativeness.

Results

Barriers

Among the 22 reported barriers (see Table 1), the most frequently answered were: 'Irregular work hours' (29.7%), 'Willpower' (24.7%), 'Unappealing food' (21.3%), 'Busy lifestyle' (17.8%), 'Price of healthy foods' (15.5%), 'Give up foods' (14.3%) and 'No difficulty' (20.6%). Another group of people showed some resistance to change when they answered with opinions like 'I don't want to change my eating habits' (12.6%) or 'Not knowing enough about healthy eating' (8.5%).

There were no statistically significant variations due to gender in the percentage of subjects selecting the different barriers about healthy eating. However, more males (27%) than females (22.5%) selected 'Willpower' as a difficulty to eating a healthier diet (Table 3). There were important variations with age, with younger men more frequently selecting 'Irregular work hours' ($P=0.002$ for linear trend) and 'Willpower' as the main difficulties to changing their dietary habits. Older people selected more frequently 'No difficulties' to eat healthy.

Regarding educational level, those with the highest level were more likely to mention 'Irregular work hours' and 'Busy lifestyle' as the main barriers to healthier eating, while those individuals with a primary education associated more often 'Unappealing foods' with a better diet in nutritional terms.

The percentage of subjects who selected 'Unappealing food' and 'Price of healthy foods' as their main difficulties to eating a healthier diet increased in the lowest socioeconomic levels. By contrast, as the socioeconomic level of respondents increased, so did the percentage of those who mentioned 'Irregular work hours' and 'Busy lifestyle'. 'Willpower' was the most commonly mentioned problem by unemployed people (37.6%), while for those who were working, time ('Irregular work hours') was the main barrier to healthy eating.

Benefits

Among the nine benefits statements included in the survey (see Table 2), the most frequently selected were:

Table 3 Perceived barriers to healthy eating by Spanish subjects (%) classified by sex, age group, education level, socioeconomic level and employment status

	Irregular work hours	Willpower	Unappealing food	Busy lifestyle	Price of healthy foods	Give up foods	No difficulty
Sex							
Male	29.6	27.0	20.9	17.6	14.1	13.4	20.0
Female	29.8	22.5	21.6	18.0	17.0	15.0	21.1
Age (years)							
15–34	36.4**	30.4	25.2	21.6	15.7	15.2	14.3
35–54	39.0	22.4	16.6	20.4	20.1	14.9	17.4
>55	26.8	22.8	18.3	13.8	16.4	12.1	25.3
Educational level							
Primary	22.0	22.5	23.9**	13.8	14.6	14.8	24.1**
Secondary	41.6	32.5	17.4	20.9	17.1	14.9	13.2
University	48.8***	23.3	14.3	32.5***	18.2	10.6	14.9
Socioeconomic level							
Lower	28.2	26.2	33.7***	15.1	24.6**	23.8*	15.5
Middle–lower	20.0	23.9	21.7	13.2	17.1	13.1	28.3
Middle	32.6	24.1	20.3	18.4	13.4	14.0	18.0
Middle–upper	43.5***	28.7	12.1	30.4**	13.6	9.5	17.5
Employment status							
Work	41.3***	27.7	17.3	22.7	15.9	13.3	13.9
Housewife	23.4	15.6	19.1	17.2	17.1	15.6	23.1
Student	34.9	31.7	25.5	24.0***	14.6	15.1	15.5
Unemployed	28.4	37.6	28.9*	10.4	20.8	16.8	13.7
Retired	14.2	18.5	23.7	10.1	11.5	12.7	35.8***
Total	29.7	24.7	21.3	17.8	15.6	14.3	20.6
EU average	25.5	20.1	12.5	20.7	18.9	26.3	17.8

Linear trend test (ordinal variables) towards the higher values or Pearson χ-square test (categorical variables): * $P<0.05$, ** $P<0.01$, *** $P<0.001$.

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Table 4 Perceived benefits of healthy eating by Spanish subjects (%) classified by sex, age group, education level, socioeconomic level and employment status

	Prevent disease	Stay healthy	Good quality of life	Control weight	Be fit	Live longer	None of these
Sex							
Male	70.4	65.5	52.2	45.2	43.8**	29.7	1.2
Female	76.7*	73.0	49.7	48.8	35.3	27.7	1.9
Age (years)							
15–34	70.3	66.0	53.2	49.7	45.8	24.1	1.1
35–54	72.6	62.5	57.8	40.5	35.5	28.1	1.4
>55	76.1	75.8	50.2	57.4*	47.8**	30.6	1.6
Educational level							
Primary	74.1	73.9***	46.0	46.6	36.2	30.9	1.8
Secondary	70.8	60.9	54.3	51.1	47.6	23.0	1.7
University	75.9	60.4	69.9***	42.8	42.8*	26.2	0
Socioeconomic level							
Lower	78.9	82.6**	53.8	52.2	40.4	38.4*	0
Middle–lower	75.6	70.0	45.5	43.5	32.4	33.2	2.8
Middle	70.9	67.7	51.0	7.2	41.0	24.8	0.4
Middle–upper	73.6	62.8	63.0	50.6	50.1	26.0	0
Employment status							
Work	70.6	64.4	54.1	42.9	41.1	27.1	1.9
Housewife	77.3	72.1	51.4	53.1	31.6	29.4	1.1
Student	66.6	65.0	51.4	56.9**	57.4	24.9	0
Unemployed	72.7	68.7	53.0	49.5	53.5	28.8	1.1
Retired	79.6	77.8*	43.8	40.4	27.0	32.7	2.6
Total	73.6	69.4	49.7	47.0	39.4	28.7	1.6
EU average	70.6	71.0	49.1	54.3	53.1	39.6	43.1

Linear trend test (ordinal variables) towards the higher values or Pearson χ-square test (categorical variables): *$P<0.05$, **$P<0.01$, ***$P<0.001$.

'Prevent disease' (73.6%), 'Stay healthy' (69.4%), 'Good quality of life' (49.7%), 'Control weight' (47.0%), 'Be fit' (39.4%), 'Live longer' (28.7%) and 'Have plenty of energy' (28.2%). Among EU subjects, the two benefits most frequently mentioned were: 'Stay healthy' (71.0%) and 'Prevent disease' (70.6%) (Table 4).

In relation to gender, more females perceived 'Prevent disease' and 'Stay healthy' as the main benefit associated with healthy diet ($P<0.05$) compared to males.

Across all age groups 'Prevent disease' was the most often mentioned benefit associated with healthy nutrition. However, among older subjects the percentage selecting 'Prevent disease' and 'Live longer' still increased, although there were no statistically significant differences.

With regard to educational level, people with university level education were more likely to select a 'Good quality of life' as one of the main benefits ($P<0.01$). In contrast, the concept of 'Stay healthy' was more prevalent in those with primary educational levels ($P<0.001$) and in those belonging to lower socio-economic levels.

The main benefits of healthy eating among retired subjects were 'Prevent disease' (79.6%) and 'Stay healthy' (77.8%). The concept of 'Stay healthy' was significantly more prevalent among retired individuals.

When the benefits of healthy eating were compared across the most important perceived barriers (Table 5) it appeared that for most of the main benefits there was not much variation across selected barriers. Most subjects who perceived 'Irregular work hours' as a barrier to a healthy nutrition, reported that a 'Good quality of life' would be the most important benefit

Table 5 Benefits of healthy eating (%) given by Spanish respondents perceiving different barriers as the most significant

Benefits	Irregular work hours	Willpower	Unappealing food	Busy lifestyle	No difficulty
Prevent disease ($n=742$)	32.1	24.1	22.1	19.0	19.8
Stay healthy ($n=699$)	30.4	26.8	25.7	18.4	18.5
Good quality of life ($n=513$)	35.9	26.4	20.8	22.6	14.7
Control weight ($n=474$)	31.4	29.4	25.8	21.5	17.5
None of these ($n=15$)	0	0	6.9	0	85.4
Total ($n=1009$)	29.7	24.7	21.3	17.8	20.6

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from it, although the differences were not statistically significant.

Discussion

For all those involved in nutrition education or food policy issues it is a priority to determine the barriers that the general public may have or perceive they have when trying to eat healthier diets and the personal benefits that they expect in relation to eating more healthily[17].

In the present study, a representative sample of the Spanish adult population was studied in order to address these two issues. Care was taken to assure the validity of the methods for subject selection and classification of the collected information. Subject selection was quota-controlled to make the samples nationally representative. In addition, weights were applied for population size when examining the Spanish average results[18]. This survey was conducted as 'omnibus' research, i.e. surveys in which interviewed individuals respond to questionnaires on different topics during the same session. This procedure diminishes the likelihood that participation of subjects was dependent of their attitudes towards a particular topic of the survey. The questionnaire was designed and validated by an international and multidisciplinary team applying standardized procedures for the selection of each question and for the codification of the presented options, however, some bias concerning social desirability may appear[18].

Barriers

In this study it could be seen that there was great variability in the different barriers to eating a healthy diet among the Spanish population. Overall, 12.6% of the subjects stated that they did not want to change their eating habits. This may be due to a lack of knowledge about the potential benefits derived from a healthy diet or because they believed they already eat healthily. Conversely, 20.6% of the Spanish subjects answered 'No difficulty' in trying to eat healthier, perhaps because they had never tried to eat healthier diets, or the fact that they did not actually understand the meaning of a healthy nutrition must be also considered[19]. This concept of 'healthy eating' was considered in the survey too, and the majority of the Spanish people defined it as a diet with 'more vegetables' as the main description[20].

Conversely, 'Willpower' was one of the most frequently cited options, so nutrition professionals not only should improve their dietary messages, but they should also put greater emphasis on motivation and show the benefits people can get from changing their diets. By contrast, 'Give up foods' was the most common barrier selected by a European population[6].

Apart from gender, there were differences in the distribution of responses about perceived barriers according to sociodemographic characteristics[21]. Subjects aged 35–54 years, those with higher socioeconomic level, individuals from university level and subjects who were employed were the ones who more often selected 'Irregular work hours' and 'Busy lifestyle' as the main barriers to trying to eat a healthier diet. It might be because they do not have enough time for food preparation because of their lifestyle and that to cook a healthy meal would take up a lot of their spare time which they perceive as impossible in relation to their jobs or lifestyle.

The youngest age group appeared to be those who more frequently regarded 'Unappealing food' as a problem to healthy nutrition, perhaps because these subjects considered healthy eating as less pleasant to look at and to eat. Thus, nutrition educators considered that this group of people follow a more informal pattern of food choice[22]. It is remarkable that a high percentage of individuals from retired employment status (35.8%) selected the item 'No difficulty' when they were asked about their barriers to healthy nutrition. This choice may be associated with the finding that older people were less inclined to try to change their dietary habits, therefore they were less likely to report problems concerning healthy diet.

About 25% of the subjects from lower socioeconomic levels regarded 'Price' as their main difficulty when trying to eat a healthier diet. This may be due to the fact that this group may regard the cost of food as prohibitive to eating a more healthy diet. Thus, it is necessary to ensure that foods which should be included in a healthy diet are not too expensive or perceived as such, and also to assess at subgroup level what the subject's beliefs are about what a better diet should entail[23].

In a pan-EU study, variability has been demonstrated in the perceived barriers to healthy eating between different EU countries. Lack of time was the most frequently mentioned difficulty among EU subjects for not following nutritional advice (24% of total EU sample). This barrier was frequently reported by the younger and the higher educated people. Other frequently reported barriers were giving up favourite foods (23%) and willpower (18%). Thus healthy diets do not appear to be viewed as an easy or attractive alternative to current diets[6].

Benefits

In relation to the benefits derived from eating a healthier diet, only 1.6% of the respondents cited none of the possible options or 'Don't know'. Therefore, most people believed that healthy eating was associated with at least one benefit.

Females were more likely than males to choose

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'Prevent disease' as a possible benefit, perhaps due to the fact that in nutrition education healthy eating is usually related to protection against chronic diseases and women are the ones who have more interest in this kind of education[24]. The concerns about body shape and weight were other potential benefits perceived among Spanish subjects and both appeared to differ between males and females, women mentioned more frequently 'Control weight' as a healthy eating benefit, while men were more likely to select 'Be fit'. This meant that depending on gender, the perceived benefits would be different perhaps because each group has a different goal or objective in eating a healthy diet[25].

The percentage of individuals choosing 'Stay healthy' and 'Live longer' as benefits increased with decreasing socioeconomic and educational levels, this decrease might be explained because both social levels may have their personal opinion about what healthy diet means, while people from higher status have another point of view about healthy nutrition such as 'Good quality of life'[26].

Within the EU the perceived benefits of healthy eating vary across countries. This may be because of differing food intakes and meal patterns across countries. So, a standardized EU nutrition policy may not be equally effective in all member states. In that study, 31% of subjects stated 'stay healthy', 24% 'prevent disease', 10% 'control weight', 10% 'quality of life' and 9% 'be fit' as the main benefits of a healthy diet[7]. In this context, any nutritional advice which is given needs to be perceived as achievable within the subject's lifestyle in an educational and social context and also perceived as compatible with regard to the tasteful aspects of food particularly for young individuals[27,28]. In addition, nutrition educators and food policy makers should try to ensure that nutritious and healthy foods are not expensive[29]. Specialists need to be aware of how the population believes they can benefit from changing their diets, and so to develop their campaigns to encourage more people to alter their eating habits in the direction of nutrition goals[30].

Nutrition educators should always be aware that the main perceived barriers of healthy eating are included in the following factors: an irregular and busy lifestyle, willpower and food-related factors (high prices, unappealing meals). These findings must be taken into account for designing more relevant nutritional messages and for addressing them to different target groups in Spain. Conversely, the aspects related to prevention of disease and promotion of health comprised the main perceived benefits for the Spanish population.

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